SAN JACINTO VELOCITY PROFILING WORK PLAN

HOUSTON, TEXAS

Prepared for the:
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY RCRA DIVISION REGION 6

Prepared by the:
U.S. Geological Survey Water Mission

February 2015

Approval Sheet

San Jacinto Velocity Profiling Work Plan

Houston, Texas

Name: Gary Miller
Title: U.S. Environmental Protection Agency Remedial Project Manager Region 6

Signature:_____ Date:_____

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Abbreviations and Acronyms

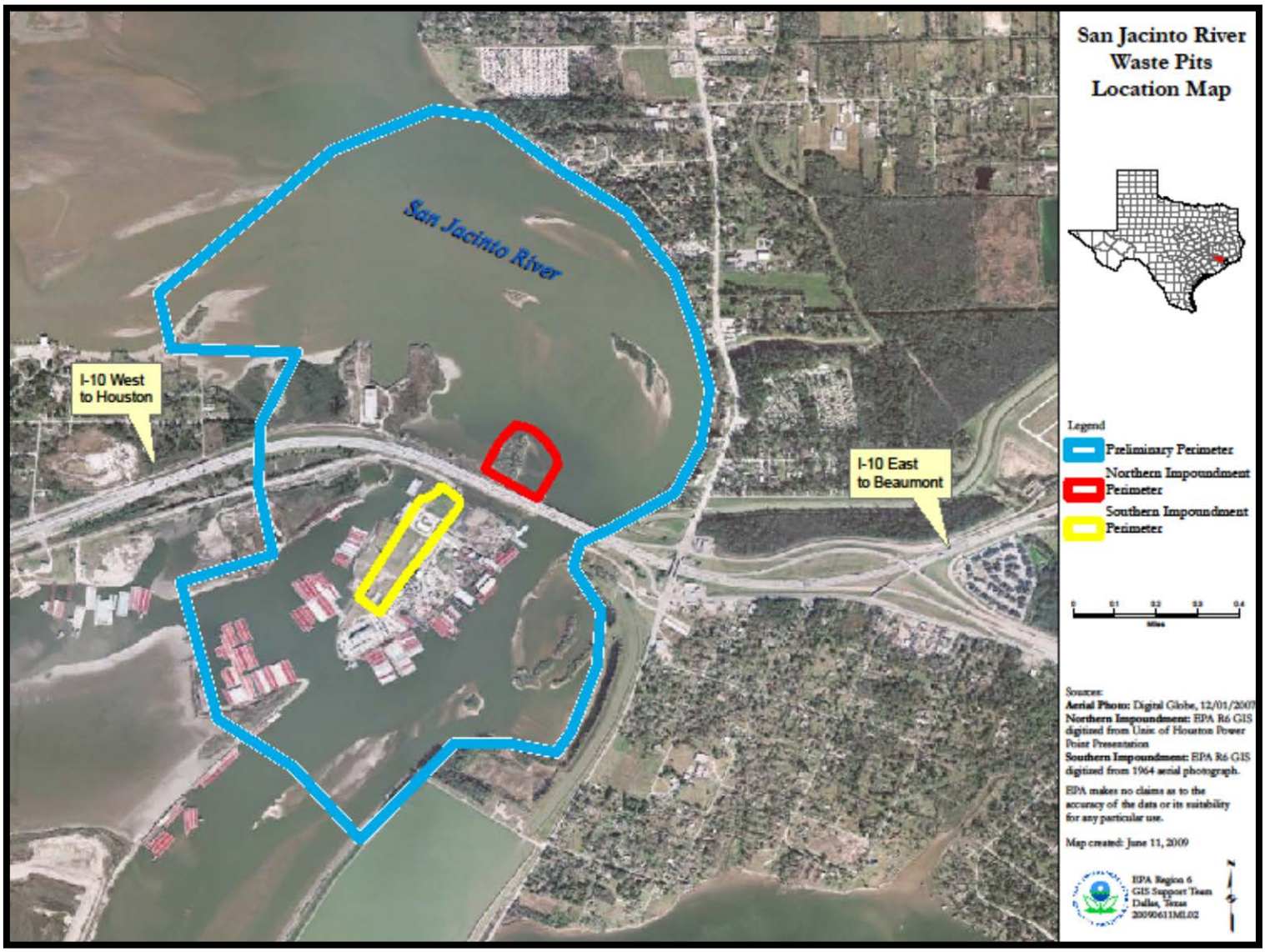
ADCP	acoustic doppler current profiler
EPA	U.S. Environmental Protection Agency
PC	project chief
PM	project manager
QAP	quality assurance plan
RPM	remedial project manager
Site	San Jacinto Superfund Site
USGS-TL	U.S. Geological Survey technical liaison
USGS	U.S. Geological Survey- water mission

1.0 Introduction

The San Jacinto Superfund Site (Site) is located north of the I-10 bridge over the San Jacinto River just east of the City of Houston (figure 1). The site consists of impoundments (approximately 14 acres) that were built in the mid-1960's. These impoundments were used to store paper mill wastes. The wastes deposited in the impoundments were contaminated with polychlorinated dibenzo-p-dioxins, polychlorinated furans, and some metals. The impoundments are partially submerged due to physical changes to the area and pose a potential exposure pathway to the San Jacinto River. In 2010, a time critical removal action was put in place where stabilization of the pits took place to prevent direct contact to humans and the environment. After the removal action a surface water hydrological model was developed by a contractor to be used as a tool to help develop a remedy for the site. The U.S. Environmental Protection Agency (EPA) is evaluating the surface water model through an independent review by the U.S. Army Corps of Engineers.

The EPA and the U.S. Geological Survey- Water Missions (USGS) have a partnership through an interagency agreement. The USGS provides a USGS Technical Liaison (USGS-TL) who is assigned to the Superfund Division of EPA Region 6 in Dallas, Texas. EPA Remedial Project Managers (RPMs) use the USGS-TL as a resource to help review documents, offer technical advice, attend site specific meetings, and to be a facilitator to find USGS personnel with specialized technical abilities to support EPA's missions. The EPA RPM for this Site has requested technical assistance from the USGS through the USGS-TL. The EPA independent reviewer of the model is in need of some velocity profiles at the Site. USGS has the expertise and equipment to collect the data that is needed for the independent reviewers. EPA provided the USGS with a work order that detailed the work that the USGS will conduct at the site. This work plan describes all the details of collecting the data that was requested by the EPA work order.

Figure 1: Location of San Jacinto Superfund Site, Houston, Texas.



2.0 Tasks

USGS staff from the USGS Texas Water Science Center in the Woodlands, Texas will collect the data at the Site. Post processing of the data will be conducted with help from the USGS Illinois Water Science Center.

Task 1: Work Plan, Quality Assurance Plan, and Site Health and Safety Plan Preparation: This work plan has been prepared and includes a site description, tasks, cross section locations, data collection methods, and reporting requirements. In addition, a quality assurance plan (QAP) has been provided as an attachment. A site health and safety plan (HASP) has also been provided as an appendix to this work plan.

Task 2: Data collection: USGS staff from the USGS Woodlands, Texas office will collect discharge and velocity profile data using an acoustic doppler current profiler (ADCP) at three transects during tidal conditions. Figure 3 shows transects selected for the site. Velocity data can be only collected in water depths greater than 1.5 foot in depth using ADCP technology, so there maybe sections of the transects where velocity data will not be able to be obtained.

Task 3: Post processing: USGS staff will post process the data using a velocity mapping toolbox for visualizing of velocity fields.

Task 4: Field report: The USGS will provide a trip report to EPA which will describe the work conducted and include the data collected at the Site.

Task 5: Discussion: USGS staff will be available for technical questions in regards to data collection and results. The technical support maybe provided maybe provided in writing, conference calls, or face to face meetings.

3.0 Project Organization

EPA Remedial Project Manager -Gary Miller: The RPM, EPA Superfund Division Region 6 is responsible for ensuring that tasks and other requirements in the inter-agency agreement are executed in a timely manner and in accordance with the quality assurance/quality control requirements in the system as defined by the work plan, inter-agency agreement, and in the QAP; and for coordinating necessary conference calls, meetings, and related project activities with the USGS and other interested parties.

Project Manager (PM) - Kent Becher: The PM provides leadership to the field team with responsibility for assuring that the project stays focused on the cooperator's needs and expectations and that all work is integrated and done in accordance with the approved work plan. The PM assures that the cooperator's interests are properly represented within USGS and serves as the primary point of contact between EPA and the USGS. Specifically, the PM keeps the USGS management apprised of the cooperator's expectations and the status of the project's progress, assists in early identification and resolution of problems, and identifies where

additional resources and effort are required to meet the USGS commitments established in the project work plan.

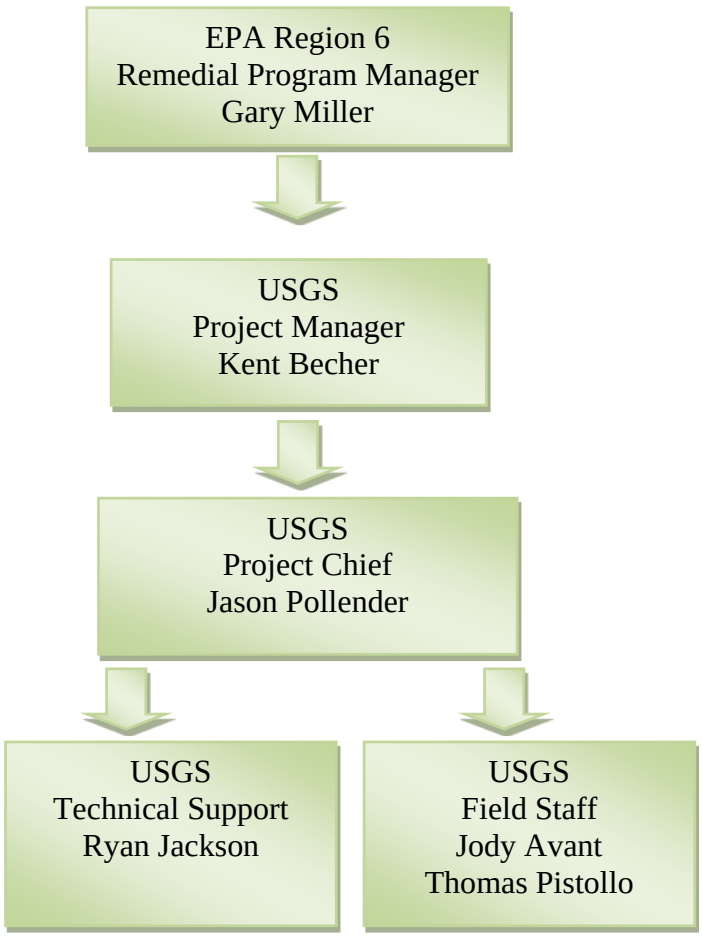
USGS Project Chief (PC) – Jason Pollender: The PC will be responsible for making sure the work outlined in this work plan is conducted. The PC will make sure that all equipment is ready for use. He will keep the PM informed on progress and any problems that may occur. The PC will provide oversight of the field team collecting the data and participate in the post processing of the data.

USGS- field staff- Jody Avant: Responsible for collecting velocity profile data at the selected locations following USGS procedures.

USGS field staff- Thomas Pistollo: Responsible for collecting velocity profile data at the selected locations following USGS procedures.

USGS-Hydrologist- Ryan Jackson: Provides technical support to the PC in the post processing of the data using the velocity mapping toolbox.

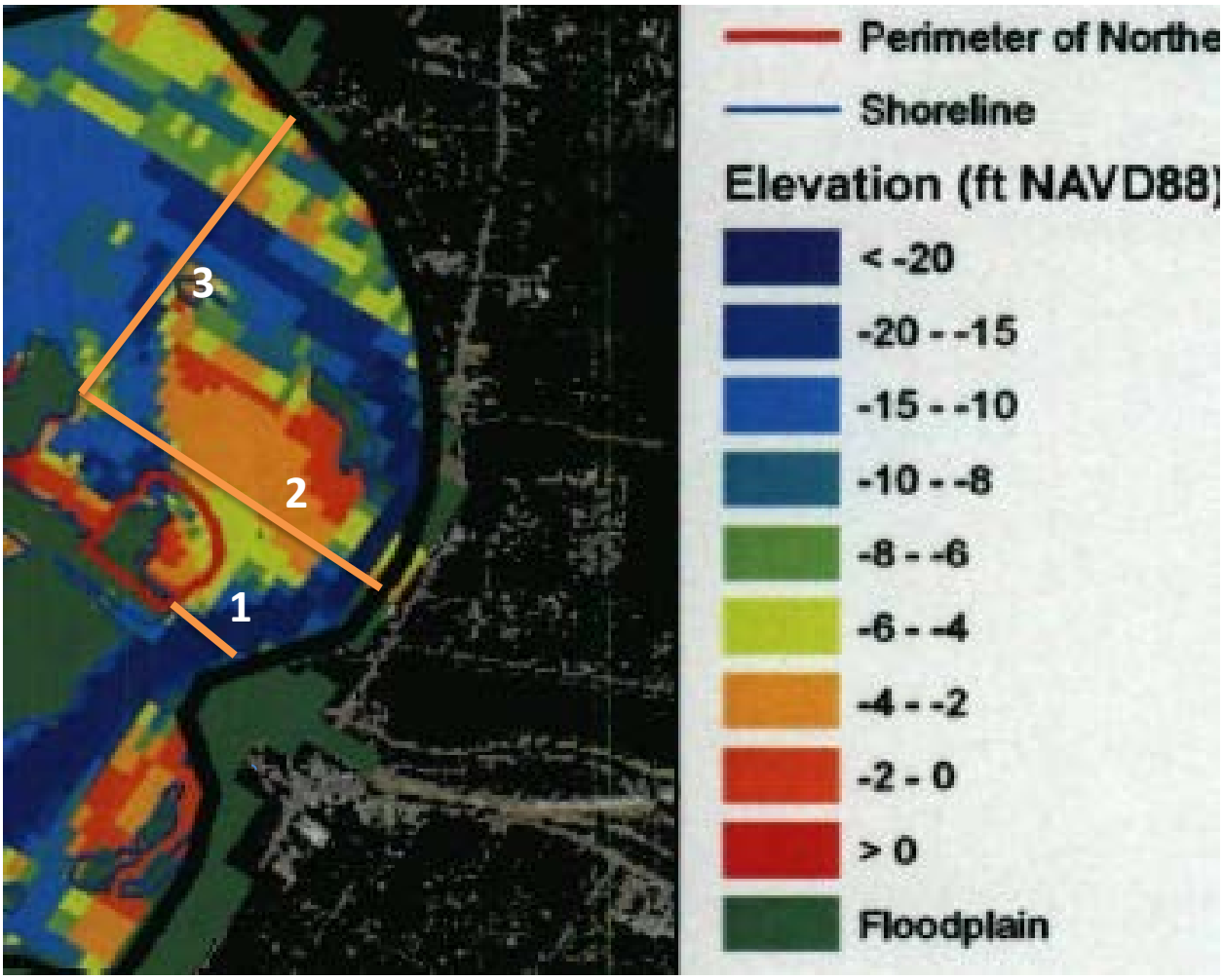
Figure 2: Project organization chart for San Jacinto Superfund Site, Houston, Texas



4.0 Velocity Profiles

The USGS will collect velocity profiles along three transects using an ADCP. The locations of the three transects are located on figure 3. USGS will collect data following methods described in Mueller, D.S. and others, 2013 http://pubs.usgs.gov/tm/3a22/pdf/tm3a22.pdf . Transect 1 will be just upstream of the I-10 bridge. Transect 2 will be upstream of transect 1 passing by the northeast side of the cap. Transection 3 will be upstream of the site.

Figure 3: Location of proposed velocity transects at San Jacinto Superfund Site, Houston, Texas



5.0 Post Processing

USGS will process the data collected from the three transects using the velocity mapping toolbox. Information on the velocity mapping toolbox is located at http://hydroacoustics.usgs.gov/movingboat/VMT/VMT.shtml.

6.0 Quality Assurance

The USGS has a standard quality assurance plan (QAP) for collecting data with an ADCP. The QAP has been provided as an attachment to this work plan. In addition, the plan can be located at http://pubs.usgs.gov/sir/2005/5183/SIR_2005-5183.pdf.

7.0 Health and Safety

USGS staff that collect data in the field are required to stay current on USGS safety policy and training. In this case, a motor boat will be used to collect the velocity data, so staff operating the boat must of have USGS motorboat safety training certification. A basic HASP has been included in this work plan (See appendix A).

8.0 Deliverables

The USGS will provide a trip report to the EPA after the data has been post processed. The trip report will provide the details of the data collection effort along with the data collected at the site.

Appendix A: Health and Safety Plan

HEALTH AND SAFETY PLAN

SAN JACINTO SUPERFUND SITE, HOUSTON, TEXAS

Prepared by:

U.S. Geological Survey Water Mission
Fort Worth, Texas

February 2015

Acronyms and abbreviations

EMS	emergency medical services
EPA	U.S. Environmental Protection Agency
ERCP	emergency response and contingency plan
FB	flash bang technique
HASP	health and safety plan
LSP	lightning safety position
NLSI	National Lightning Safety Institute
OSHA	Occupational Safety and Health Administration
PC	project chief
PM	project manager
PSO	project safety officer
RPM	remedial project manager
SITE	San Jacinto Superfund Site
USGS	United States Geological Survey Water Mission

Introduction

This Health and Safety Plan (HASP) defines and establishes the policies and procedures that protect workers and the public from potential hazards posed by planned project activities at the San Jacinto River Superfund Site near Houston, Texas (Site). The work is being performed by the U.S. Geological Survey Water Mission (USGS) for the U.S. Environmental Protection Agency (EPA) Region Superfund Division in Dallas, Texas.

The plan incorporates health and safety policies and safe operating procedures for the project activities. These project activities will comply with the Occupational Safety and Health Administration (OSHA) and USGS safety requirements.

Site-Specific Environmental Safety and Health Plan

USGS has developed this HASP specifically for field activities to be conducted at the Site. The USGS team considers safety the highest priority when working at a Site Project activities will be conducted in a manner that minimizes the probability of injury, accident, or incident occurrence. **USGS team employees and visitors are required to be familiar with the HASP prior to site entry and to sign the Health and Safety Plan Worker Acknowledgment (Attachment 1).**

The HASP and site activities will be in compliance with the following regulations, contract requirements, and guidelines:

- USGS Health and Safety Manual
  - USGS Safety Manual, 2001, Occupational Safe and Health Program Requirements Handbook, 445-2-1
  - USGS Safety Manual, 2002, Environmental Management and Compliance Requirements Handbook, 445-1-1
- Title 29 CFR 1910.1200 – Hazard Communication
- U.S. Department of Labor, Occupational Safety and Health Administration (OSHA) standards

Although the HASP focuses on the specific work activities planned for this project site, it must remain flexible because of the nature of the work. Conditions may change and unforeseen situations may arise that require deviations from the original plan. This flexibility allows modification by the USGS Project Manager (PM) and Project Chief (PC) who take into account changing site conditions, weather, and changes in scope of work.

This HASP is based on the scope of work, project work plan, and site-specific information provided that includes the following:

Background information on previous site operations
Location and approximate size of the site
Site description and site map

2.1 Scope of Work

The USGS will collect velocity data at the Site along three transects across the river. Details of the scope of work are located within the work plan (above).

2.2 Site Description

The San Jacinto Superfund Site is located north of the I-10 bridge over the San Jacinto River just east of the City of Houston. The site consists of impoundments approximately 14 acres in size that was built in the mid-1960s. These impoundments were used to store paper mill wastes. The wastes deposited in the impoundments were contaminated with polychlorinated dibenzo-p-dioxins, polychlorinated furans, and some metals. The impoundments are partially submerged due to physical changes to the area and pose a potential exposure pathway to the San Jacinto River. In 2010, a time critical removal action was put in place where stabilization of the pits took place to prevent direct contact to humans and the environment. After the removal action a fate and transport model was developed by a contractor to be used as a tool to help developed a remedy for the site. The U.S. Environmental Protection Agency (EPA) is evaluating the fate and transport model through an independent review.

Key Personnel and Management

The PC is responsible for formulating and enforcing health and safety requirements, and for implementing this HASP. The following summarizes the health and safety responsibilities of the site management.

3.1 Project Manager Safety Responsibilities

The PC has the overall responsibility for the project and assures that the requirements of the contract are attained in a manner consistent with the HASP requirements. The PM is responsible for the writing of the HASP and getting approval of the HASP following USGS protocol. The PM will coordinate with the EPA Remedial Project Manager (RPM) to assure that the work is completed in a manner consistent with the HASP. The PC will act as the Project Safety Officer (PSO). The PC may designate qualified site personnel to be the acting PSO if PC isn't onsite. The PC is responsible for field implementation of the HASP. The PC will be the main contact in any on-site emergency situation. The PM is authorized to administer this HASP and to stop work when an imminent health or safety risk exists.

3.2 Employee Safety Responsibility

Each employee is responsible for his or her own safety as well as the safety of those around him/her. The employee shall use the equipment provided in a safe and responsible manner as directed by his/her the PC. USGS personnel will follow the policies set forth in USGS Safety Program.

3.3 Responsible USGS Health and Safety Personnel

The following personnel are responsible for health and safety on site:

Project Manager:	Kent Becher (817) 263-9545 ext 204 (817) 253-0356 (cell)
Project Chief:	Jason Pollender (936) 271-5325

4.0 Project Hazard Analysis

The waste pits located at this Site have been capped, so there isn't any potential for coming into contact with any potential hazardous waste, thus the hazards at this Site are all physical. The USGS uses a job hazard analysis for Site visits. A job hazard analysis for this site is attached below.

USGS

STATION NAME: SAN JACINTO RIVER AT I-10

PREPARED BY: KENT BECHER **REVIEWED BY:** **DATE:**

REQUIRED PROTECTIVE CLOTHING AND SAFETY EQUIPMENT: PERSONAL FLOATATION DEVICE (PFD), THROW BAGS, THROW ABLE PFD, CABLE CUTTERS, TAGLINE FLAGS, MARINE RADIO, AIR HORN, BOAT FLAGS, 1ST AID KIT, GLOVES, STEEL-TOED SHOES, AND BACK SUPPORT.

OTHER RECOMMENDED ITEMS:

Sequence of Basic Job Steps	Potential Accidents/Hazards	Recommended Safe Job Procedures
Prior to entering stream	Drowning	Boat operator must be a USGS certified Motorboat operator. A PFD is REQUIRED to be worn when working in, on, or over ANY body of water. PFDs will be international orange in color and equipped with retroflective tape in accordance with 46 CFR 25.25-15.
Unloading equipment	Pinching fingers, mashing toes, back strain	Use caution, be aware of hand placement, use proper lifting techniques (i.e. lift with legs not back, get assistance as necessary). Wear gloves, steel-toed shoes, and back support.
Refueling	Explosion, fire, hazardous vapors, splashing fuel in eyes, spills.	Wear eye protection, shut off engine, refuel in well-ventilated area, keep fuel away from sparks or open flame, transport fuel in approved containers, have spill kit ready in case of fuel spill.
Stringing tagline	Floating or submerged debris	Be alert to debris, have cutters ready.
	Boat traffic	Be aware of surroundings, use flags on tagline, have method to warn oncoming boats (i.e. marine radio, air horn), have cutters ready.
	Boat visibility	Use U.S. Coast Guard designated public safety activity light signals and orange flags at bow and stern.
Making measurement	Floating or submerged debris	Retrofit all "B" reels (and modified A reels) for a break-a-way cable. Be alert to debris, have cutters ready.
	Boat traffic	Be aware of surroundings, have method to warn oncoming boats (i.e. marine radio, air horn), have cutters ready. DO NOT MEASURE IN A BEND. Select stream reach for maximum visibility. Occupants shall be seated such that someone is facing upstream and

		downstream at all times.
Removing tagline	Floating or submerged debris	Be alert to debris, have cutters ready.
Reloading equipment	Pinching fingers, mashing toes, back strain	Use caution, be aware of hand placement, use proper lifting techniques (i.e. lift with legs not back, get assistance as necessary). Wear gloves, steel-toed shoes, and back support.
Site Specific conditions that may be a potential hazard:		
Barge traffic	Collison	Be particularly aware of barge traffic in this area of the river.

4.1 Vehicle Traffic

USGS employees and visitors shall follow traffic rules. Government vehicles shall yield to bikes, pedestrians, and railroad crossings. Vehicles must come to a complete stop at railroad crossings. Vehicles must be operated in a safe and legal manner. Motor vehicles that are defective or not operating properly must be reported immediately. Seat belts must be worn while driving. Personnel shall drive at posted speed limits or at speeds consistent with prevailing road, traffic, or weather conditions.

4.2 Vehicle Safety Management

Motor vehicle incidents are the number one cause of occupational fatalities, accounting for one in three deaths. Fifty percent or more of vehicle safety incidents occur while backing up. USGS requires all employees to go through driver's safety training ever year. USGS requires employees to use seat belts at all times when traveling in USGS owned or leased/rented vehicles.

All USGS personnel and site visitors shall obey all vehicle traffic safety requirements imposed by local and state agencies. Designated routes for parking and truck traffic relating to construction activities must be established before doing the work. An emergency contact person must be established before work to ensure proper notifications in the event of an incident.

USGS employees are expected to incorporate safe actions and preparations to avoid vehicle accidents and personal injury during work and off-hours. Vehicles traveling before dawn and at dusk in rural or wooded areas should be prepared to brake for wildlife, e.g. deer crossing roadways.

Weather conditions can have a profound effect on driving. On slippery roads, drive more slowly. Stop and turn with care. Keep several car lengths from other vehicles. At speeds in excess of 35 miles per hour (mph), the chances of hydroplaning increase with speed. In general, keep back 1 car length for every 10 mph to prevent striking the car ahead.

Vehicles will be operated in accordance with the requirements listed below:

Seatbelt use is mandatory for all passengers;

Personnel may not ride in the back of cargo vehicles;

The driver must make a 360 degree walk around the assigned vehicle prior to vehicle movement;

A ground guide is used to back up any vehicle;

Vehicle speed is limited to the posted speed limits for developed roadways, 25 mph maximum on dirt roads and 10 mph maximum off-road (based on conditions);

Vehicle driven in four wheel low and low gear when on dirt roads or off road driving where steep grades dictate;

All operators must possess a valid driver's license;

Fuel or gasoline is not transported inside the passenger compartment;

No vehicle is left running when unattended; and

Parking brakes are used when vehicles are parked.

In the event of a vehicle incident, notify the PC ***immediately*** and complete all required reports.

4.3 Safe Work Practices

The following items are requirements to protect the health and safety of workers and will be discussed in the safety briefing prior to initiating work on the site.

Eating, drinking, chewing gum or tobacco, smoking, or any practice that increases the probability of hand-to-mouth transfer and ingestion of contaminants is prohibited in the site area.

Hands and face must be washed upon leaving the site and before eating, drinking, chewing gum or tobacco, smoking, or other activities that may result in ingestion of contaminants.

During site operations, each worker will consider himself as a safety backup to his partner. Off-site personnel provide emergency assistance. Site personnel will be aware of dangerous situations that may develop.

Visual contact will be maintained between buddies on site when performing hazardous duties.

No one will be admitted to the site without the proper safety equipment, training, and medical certification.

Personnel must comply with established safety procedures. Any staff member who does not comply with safety policy as established by the PSO may be immediately dismissed from the site.

4.4 Buddy System

A "buddy system" will be implemented when conditions represent a risk to personnel. A buddy system requires that two or three people work as a team, each looking out for the other. "Buddies" must always be in each other's line of sight and should maintain verbal or visual communication. No one must enter into the site area alone because hazards are likely to exist, which could render the employee helpless and prevent self-rescue.

4.5 Site Communications

Each employee will have access to a cell phone with emergency contact numbers included within this document.

4.6 Accident Investigation

All injuries including cases that require only minor first aid will be reported in accordance with *USGS Safety Program*. All first aid cases, near miss incidents, occupational injuries or illnesses, and vehicle and equipment damage must be investigated.

5.0 Emergency Response

5.1 Pre-Emergency Planning

Prior to engaging in investigation activities at the site, the USGS team will plan for possible emergency situations. The Channelview Fire Department (281) 452-5782 will be contacted when the magnitude of the anticipated emergency conditions warrant.

The situations shown in **Table 5-1** would warrant implementation of the Emergency Response and Contingency Plan (ERCP).

Table 5-1 Situations Warranting Implementation of the Emergency Response and Contingency Plan

Type Hazard	Hazard
Fire/explosion	• The potential for human injury exists • Toxic fumes or vapors are released • The fire could spread on-site or off-site and possibly ignite other flammable materials or cause heat-induced explosions • The use of water and/or chemical fire suppressants could result in contaminated run-off • An imminent danger of explosion exists
Spill or release of hazardous materials	• The spill could result in the release of flammable liquids or vapors, thus causing a fire or gas explosion hazard • The spill could cause the release of toxic liquids or fumes in sufficient quantities or in a manner that is hazardous to or could endanger human health
Natural disaster	• A rain storm exceeds the flash flood level • The facility is in a projected tornado path or a tornado has damaged facility property • Lightning • Severe wind gusts are forecasted or have occurred and have caused damage to the facility
Medical emergency	• Trauma injuries (broken bones, severe lacerations/ bleeding, burns) • Eye/skin contact with hazardous materials • Loss of consciousness • Heat stress (heat stroke) • Cold stress (hypothermia) • Heart attack • Respiratory failure • Allergic reaction

5.2 Emergency Recognition and Prevention

Because unrecognized hazards may result in emergency incidents, it will be the responsibility of the USGS PM or PC, through daily site inspections and employee feedback (team safety observations and daily safety meetings), to recognize and identify the hazards that may be found at the site. Potential hazards are shown in **Table 5-2**.

Table 5-2
Potential Hazards

Type Hazard	Hazard
Physical	Fire/explosion Slip/trip/fall Electrocution Confined space Excessive noise
Mechanical	Heavy equipment Stored energy system Pinch points Electrical equipment Vehicle traffic Train traffic
Environmental	Electrical storms High winds Heavy rain/snow Temperature extremes (heat/cold stress) Poisonous plants/animals

Once a hazard has been recognized, the USGS PM or PC will take immediate action to prevent the hazard from becoming an emergency. This may be accomplished by the following:

Daily safety meeting
Task specific training prior to commencement of activity
Following applicable USGS standard operating procedures

Table 5-3 provides emergency telephone numbers.

Table 5-3
Emergency Telephone Numbers

Emergency Contacts	Phone Numbers
Fire Department	911
Police	911
Hospital – Kindred Hospital East Houston	(832) 200-5500
National Capital Poison Control Center	1-(800) 222-1222
USEPA Region 6 (EPA Regional Branch Response Center)	(214) 665-2222
Agency for Toxic Substances and Disease Registry	(404) 639-0515 (24-hour)
Project Manager USGS- Kent Becher	(817) 253-0356
EPA Region 6 Remedial Project Manager- Gary Miller	(214) 542-9617
Project chief USGS Jason Pollender	(936) 271-5325
USGS Texas Water Science Center Program Coordinator- Milton Sunvision	(512)-940-9393
National Response Center	1-(800) 424-8802

5.3 Emergency Response Contingency Plan

This section details the contingency measures USGS will take to prepare for and respond to fires, explosions, spills, and releases of hazardous materials, hazardous weather, and medical emergencies.

The procedures listed below will be used to respond to medical emergencies. The USGS PM or PC will contact the local hospital and inform them of the site hazards and potential emergency situations.

Response

The nearest workers will immediately assist a person who shows signs of medical distress or who is involved in an accident. The USGS PM or PC will be summoned. The field crew will relay the following information:

Location of the victim at the work site
Nature of the emergency
Whether the victim is conscious
Specific conditions contributing to the emergency, if known

The following actions will then be taken depending on the severity of the incident:

Life-Threatening Incident – If an apparent life-threatening condition exists, the USGS onsite staff will call 911 will send a rescue truck with EMS personnel. An on-site person will be appointed to meet the rescue truck and direct the truck to the victim. USGS personnel will evacuate any injured person within the site to a clean area for treatment by EMS personnel arriving with the rescue truck.

Non Life-Threatening Incident – If it is determined that no threat to life is present, appropriate first aid or medical attention will be administered.

Any personnel requiring emergency medical attention will be evacuated from the site if doing so would not endanger the life of the injured person or otherwise aggravate the injury. Personnel will not enter the area to attempt a rescue if their own lives would be threatened.

Any injuries, no matter how small, will be reported to the USGS PM or PC. An accident/injury/illness report will be completely and properly filled out and submitted to the USGS safety officer, in accordance with USGS accident reporting procedures. Please see attachment 3 for Department of Labor Treatment Authorization Form.

A list of emergency telephone numbers is given in **Table 5-3**.

Notification

The following personnel/agencies will be notified in the event of a medical emergency:

Local Fire Department or EMS
On-site personnel
USGS PM/PC
USGS upper management
EPA Remedial Project Manager

Directions to Hospital

Hospital: Kindred Hospital East Houston
Address: 15101 East Fwy, Channelview, TX Telephone: (832) 200-5500
Directions from Site to Hospital (See Hospital Map in Attachment B):

Go **west** on **I-10** towards **Houston** from site;
at 3.8 miles **Turn Exit 781 B** toward **Market St;**
at 4.0 miles **merge onto East FWY;**
at 4.2 miles **Kindred Hospital is to the right;**

Distance from Site to hospital is approximately 5.5 miles. Approximate driving time is 10 minutes. Please see attachment 2 for map to hospital.

5.4 Fire Contingency Measures

USGS personnel are not trained professional firefighters. Therefore, if there is any doubt that a fire cannot be quickly contained and extinguished; USGS personnel will notify the local fire department.

The following procedures will be used to prevent the possibility of fires and resulting injuries:

Sources of ignition will be distant from areas where flammable materials are handled or stored.

"Fire extinguishers will be placed in areas where a fire hazard may exist.

The following procedures will be used in the event of a fire:

Anyone who sees a fire will notify the USGS PC who will then contact the local Fire Department.

Work crews will be comprised of pairs of workers (buddy system) who will accompany each other to a safe distance from the fire hazard.

When a small fire has been extinguished by a worker, the USGS PC will be notified.

5.5 Hazardous Weather Contingency Measures

Operations will not be started or continued when the following hazardous weather conditions are present:

Lightning
Heavy rains/snow
High winds/tornadoes

5.5.1 Lightning Safety

As per recommendations of the National Lightning Safety Institute (NLSI), lightning safety should be practiced during thunderstorms. Measuring lightning's distance is useful. Using the flash/bang (F/B) technique, for every five seconds (from the time of seeing the lightning flash to hearing the associated thunder), lightning is 1 mile away. A F/B of 10 seconds equals 2 miles; a F/B of 20 seconds equals 4 miles, etc. The span of a lightning strike can be as much as 6 to 8 miles from the same point of origin. The NLSI recommends the 30/30 rule: suspend activities at the F/B of 30 (6 miles) or when first hearing thunder. Outdoor activities should not be resumed until 30 minutes have passed from the last observable thunder or lightning. If you are suddenly exposed to nearby lightning, adopt the so-called Lightning Safety Position (LSP). LSP means stay away from other people, take off all metal objects, crouch with feet together and head bowed, and place hands on ears to reduce acoustic shock from nearby thunder. When lightning threatens, standard safety measures should include: Avoid water. Avoid the high ground. Avoid open spaces. Avoid all metal objects including electric wires, fences, machinery, motors, power tools, etc. Unsafe places include underneath canopies, small picnic or rain shelters, or near trees. Where possible, find shelter in a substantial building or in a fully enclosed metal vehicle such as a car, truck or a van with the windows completely shut. If lightning is striking nearby when you are outside, you should:

A. ***Crouch down***. Put feet together. Place hands over ears to minimize hearing damage from thunder.

B. ***Avoid proximity*** (minimum of 15 ft.) to other people.

5.5.2 Tornado Safety

The weather in the Texas can produce strong thunderstorms with strong winds, lightning, hail, and potential tornados. The following section describes safety guidelines for tornados when in the field.

- Listen to weather prior to going out in the field to determine if current weather conditions are favorable to tornadic activity (tornado watch).
- Watch for stormy looking clouds and tune into a radio station if you see inclement weather approaching. Typical tornado clouds can be greenish or greenish black. Watch for rotation in the clouds such as a funnel. Hail and heavy rain followed by dead calm or a fast, intense wind shift is another sign of a tornado. Any loud roars sounding like a freight train or jet engine could be another warning sign.
- If there is a tornado warning or weather that appears to be tornadic in nature, seek shelter in a building away from windows. If possible seek shelter in a level below ground. If not, get into an interior room with as many walls between you and the tornado. Lay down flat protecting your head with your arms and cover your body with a mattress or anything to help protect you from flying debris.
- If there is no nearby shelter, do not get in a car to try to outrun the tornado. Find a ditch or low lying spot and lay down protecting your head with your arms. Stay away from trees and cars since they can be picked up and dropped on your by the tornados force.
- If you do encounter a tornado, be very cautious of hazards caused by the tornado after it has passed. Hazards can include gas leaks, sharp objects littering the damaged area, partially collapsed buildings, and leaking fuel tanks. Get away from the area as soon as possible to avoid these potential dangers.

Attachment 1
Site Safety and Health Plan Worker Acknowledgment

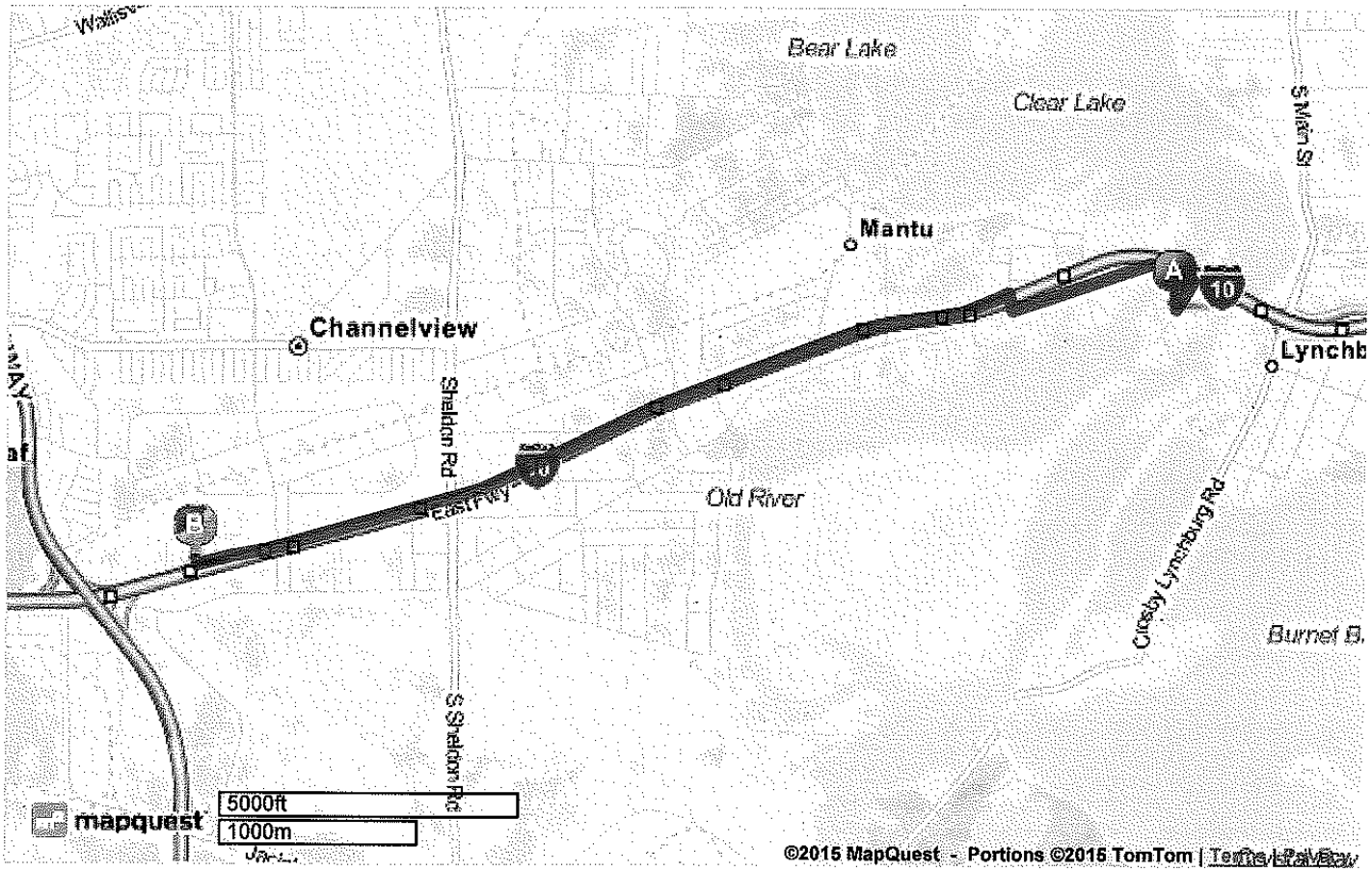
WORKER ACKNOWLEDGMENT TO HEALTH AND SAFETY PLAN

I HAVE BEEN TRAINED ON THE SAFETY PLAN FOR THIS SITE AND FULLY UNDERSTAND ITS CONTENTS.

NAME	SIGNATURE	DATE

Attachment 2
Map to Hospital

Total Travel Estimate: **5.32 miles - about 7 minutes**



Attachment 3 -Authorization for Treatment Form

Authorization for Examination
And/Or Treatment

U.S. Department of Labor
Employment Standards Administration
Office of Workers' Compensation Programs

The following request for information is required under (5 USC 8101 et. seq.). Benefits and/or medical services expenses may not be paid or may be subject to suspension under this program unless this report is completed and filed as requested. Information collected will be handled and stored in compliance with the Freedom of Information Act, the Privacy Act of 1974 and OMB Cir. No. A-108.

Persons are not required to respond to this collection of information unless it displays a currently valid OMB control number.

OMB No.: 1215-0103
Expires: 10-31-99

PART A - AUTHORIZATION

1. Name and Address of the Medical Facility or Physician Authorized to Provide the Medical Service:

2. Employee's Name (last, first, middle)	3. Date of Injury (mo., day, yr.)	4. Occupation

5. Description of Injury or Disease:

6. You are authorized to provide medical care for the employee for a period of up to sixty days from the date shown in item 11, subject to the condition stated in item A, and to the condition indicated either 1 or 2, in item B.

A. Your signature in item 35 of Part B certifies your agreement that all fees for services shall not exceed the maximum allowable fee established by OWCP and that payment by OWCP will be accepted as payment in full for said services.

B. ☐ 1. Furnish office and/or hospital treatment as medically necessary for the effects of this injury. Any surgery other than emergency must have prior OWCP approval.

☐ 2. There is doubt whether the employee's condition is caused by an injury sustained in the performance of duty, or is otherwise related to the employment. You are authorized to examine the employee using indicated non-surgical diagnostic studies, and promptly advise the undersigned whether you believe the condition is due to the alleged injury or to any circumstances of the employment. Pending further advice you may provide necessary conservative treatment if you believe the condition may be to the injury or to the employment.

7. If a Disease or Illness is Involved, OWCP Approval for Issuing Authorization was Obtained from: (Type Name and Title of OWCP Official)	8. Signature of Authorizing Official: 9. Name and Title of Authorizing Official: (Type or print clearly)
10. Local Employing Agency Telephone Number:	11. Date (mo., day, year)
12. Send one copy of your report: (Fill in remainder of address) U.S. DEPARTMENT OF LABOR Employment Standards Administration Office of Workers' Compensation Programs	13. Name and Address of Employee's Place of Employment: Department or Agency Bureau or Office Local Address (including ZIP Code)

Public Burden Statement

We estimate that it will take an average of 5 minutes to complete this collection of information, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. If you have any comments regarding these estimates or any other aspect of this collection of information, including suggestions for reducing this burden, send them to the Office of Workers' Compensation Programs, U.S. Department of Labor, Room S-3229, 200 Constitution Avenue, N.W., Washington, D.C. 20210.

DO NOT SEND THE COMPLETED FORM TO THIS OFFICE

Form CA-16
Rev. Jan. 1997

PART B - ATTENDING PHYSICIAN'S REPORT

14. Employee's Name (last, first, middle)

15. What History of Injury or Disease Did Employee Give You?

16. Is there any History or Evidence of Concurrent or Pre-existing Injury, Disease, or Physical Impairment? (If yes, please describe)
☐ Yes ☐ No

16a. ICD-9 Code

17. What are Your Findings? (Include results of X-rays, laboratory tests, etc.)

18. What is Your Diagnosis?

18a. ICD-9 Code

19. Do You Believe the Condition Found was Caused or Aggravated by the Employment Activity Described? (Please explain your answer if there is doubt.)
☐ Yes ☐ No

20. Did Injury Require Hospitalization? ☐ Yes ☐ No
If yes, date of admission (mo., day, year)
Date of discharge (mo., day, year)

21. Is Additional Hospitalization Required?
☐ Yes ☐ No

22. Surgery (If any, describe type)

23. Date Surgery Performed (mo., day, year)

24. What (Other) Type of Treatment Did You Provide?

25. What Permanent Effects, If Any, Do You Anticipate?

26. Date of First Examination (mo., day, year)

27. Date(s) of Treatment (mo., day, year)

28. Date of Discharge from Treatment (mo., day, year)

29. Period of Disability (mo., day, year) (If termination date unknown, so indicate)
Total Disability: From To
Partial Disability: From To

30. Is Employee Able to Resume
☐ Light Work Date:
☐ Regular Work Date:

31. If Employee is Able to Resume Work, Has He/She been Advised? ☐ Yes ☐ No If yes, Furnish Date Advised

32. If Employee is Able to Resume Only Light Work, Indicate the Extent of Physical Limitations and the Type of Work that Could Reasonably be Performed with these Limitations.

33. General Remarks and Recommendations for Future Care, if Indicated. If you have made a Referral to Another Physician or to a Medical Facility, Provide Name and Address.

34. Do You Specialize? ☐ Yes ☐ No (If Yes, state specialty)

35. SIGNATURE OF PHYSICIAN. I certify that all the statements in response to the questions asked in Part B of this form are true, complete and correct to the best of my knowledge. Further, I understand that any false or misleading statement or any misrepresentation or concealment of material fact which is knowingly made may subject me to felony criminal prosecution.

36. Address (No., Street, City, State, ZIP Code)

37. Tax Identification Number

38. National Provider System Number

39. Date of Report

MEDICAL BILL: Charges for your services should be presented to the AMA standard "Health Insurance Claim Form" (AMA OP 407/408/409; OWCP-1500a, or HCFA 1500). Service must be itemized by Current Procedural Terminology Code (CPT 4) and the form must be signed.

For sale by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402

INSTRUCTIONS FOR AUTHORIZING OFFICIAL FOR COMPLETION OF PART A

SELECTION OF PHYSICIAN

- A Federal employee injured by accident while in the performance of duty has the initial right to select a physician of his/her choice to provide necessary treatment. The supervisor shall immediately authorize examination and appropriate medical care by use of Form CA-16 issued to either a United States medical officer/hospital or any duly qualified physician/hospital of the employee's choice.

  If the employee elects to be treated by a private physician, a copy of the American Medical Association standards billing form (AMA OP 407/408/409; OWCP-1500a) should be supplied together with Form CA-16.

  A physician who is debarred from the FECA program as provided at 20 CFR 10.450-457 may not be authorized to examine or treat an injured Federal employee.

  Generally, 25 miles from the place of injury, employing agency, or the employee's home is a reasonable distance to travel for medical care; however, other pertinent factors must also be considered.

PERIOD OF AUTHORIZATION

- Form CA-16 is valid for up to sixty days from date of issuance, and may be terminated earlier upon written notice from OWCP to the provider. It should not be used to authorize a change of physicians after the initial choice is exercised by the employee.

FEDERAL MEDICAL FACILITIES

- U.S. medical facilities include Public Health Service, Military, or VA hospitals. Federal health service facilities (health units) established under 5 USC 7901 are not U.S. medical facilities as used herein (see 20 CFR 10.400).

DEFINITION OF INJURY

- The term "injury" includes damage to or destruction of medical braces, artificial limbs and other prosthetic devices. Eyeglasses and hearing aids are included only if the damages were incidental to a personal injury which required medical services. Treatment for illness or disease should not be authorized unless approval is first obtained from OWCP.

DEFINITION OF PHYSICIAN

- The term "physician" includes doctors of medicine (MD), surgeons, podiatrists, dentists, clinical psychologists, optometrists, chiropractors and osteopathic practitioners within the scope of their practice as defined by State law. The reimbursable services of chiropractors under the FECA are limited by statute to physical examination, related laboratory tests and X-rays to diagnose subluxation of the spine; and treatment consisting of manual manipulation of the spine to correct a subluxation demonstrated by X-ray.

FORM COMPLETION

- Part A shall be completed in full by the authorizing official. The authorization is not valid unless the name and address of the physician or hospital is entered in Item 1 and the signature of the authorizing official appears in Item B. Check B1 or B2 or Item 6, whichever is appropriate. In case of illness or disease, only Box B2 may be checked.

  Show the address of the proper OWCP Office in Item 12. Send original and one copy of Form CA-16 to the medical officer or physician. If issued for illness or disease, a copy must also be sent to OWCP.

ADDITIONAL INFORMATION

- See 20 CFR and/or Chapter 810, Federal Personnel Manual (FPM).

Information for Physician - See Reverse Side

INFORMATION FOR PHYSICIAN

YOUR AUTHORIZATION

- Please read Part A of Form CA-16. You are authorized to examine and provide treatment for the injury or disease described in Item 5, for a period of not more than 60 days from the date of issuance, subject to the conditions in Item 6. A physician who is debarred from the FECA program as provided at 20 CFR 10.450-457 may not be authorized to examine or treat an injured Federal employee. Authorization may be terminated earlier upon written notice from OWCP. For extension of the authorization to treat beyond the 60 day period, apply to the office shown in Part A, Item 12.

USE OF CONSULTANTS AND HOSPITALS

- Your may utilize consultants, laboratories and local hospitals, if needed. Authorize semi-private accomodations unless a private room is medically necessary. Ancillary treatment may be provided to a hospitalized employee as necessary.

REPORTS

- After examination, complete items 14 through 39, of Part B, and send your report, together with any additional narrative or explanatory material, to the address listed in Part A, Item 12. If the employee sustained a traumatic injury and is disabled for work, reports on Form CA 17, "Duty Status Report" may be required by the employing agency during the first 45 days of disability. If disability continues beyond 45 days, monthly reports should be submitted. Reports from all consultants are also required. Delay in submitted medical reports may delay

RELEASE OF RECORDS

- Injury reports are the official records of OWCP. They shall not be released to anyone nor may any other use be made of them without the approval of OWCP.

BILLING FOR SERVICES

- OWCP required that charges be itemized using the AMA standard "Health Insurance Claim Form" (AMA OP 407/408/409; OWCP-1500, or HCFA-1500). Each procedure must be identified, in Column 24 C of the form, by the applicable Current Procedural Terminology (4th edition) Code CPT 4). A copy of the form may be supplied by the employee at the time treatment is sought.

- Payment for chiropractic services is limited to charges for physical examinations, related laboratory tests, and X-rays to diagnose a subluxation of the spine; and treatment consisting of manual manipulation of the spine to correct a subluxation demonstrated by X-ray.

TAX IDENTIFICATION NUMBER

- The provider's Tax Identification Number (TIN) is an important identifier in the OWCP system. To speed processing and to reduce inaccuracy of payment, the provider's TIN (Employer Identification Number or SSN) should be shown on all reports and billings submitted to OWCP. If possible, providers should decide on a single TIN - either corporate or personal - which is used consistently on OWCP claims.

ADDITIONAL INFORMATION

- Contact the OWCP shown in item 12 of Part A.

Please Remove These Instructions Before Submitting Your Report.